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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,006	01/31/2006	Cheng G. Li	61861A	9880

109 7590 02/18/2010

The Dow Chemical Company
Intellectual Property Section
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EXAMINER	
NGUYEN, TU MINH	
ART UNIT	PAPER NUMBER
3748	

MAIL DATE	DELIVERY MODE
02/18/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,006	LI ET AL.	
	Examiner	Art Unit	
	TU M. NGUYEN	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 11-19* is/are pending in the application.

4a) Of the above claim(s) *6,7,11 and 13-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8,9,12,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. An Applicant's Amendment filed on February 6, 2008 has been entered. Claim 10 has been canceled; claims 1-9 have been amended; and claims 11-19 have been added. Overall, claims 1-9 and 11-19 are pending in this application.

Election/Restriction

2. Applicant's election without traverse of the species of Figure 5 or Figure 7 in an Applicant's Response to an Election/Restriction Requirement submitted on October 30, 2009 is acknowledged. Claims 1-5, 8, 9, 12, 18, and 19 are readable thereon and will be examined in their full merit. Claims 6, 7, 11, and 13-17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 8, 9, 12, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Molinier et al. (U.S. Patent 7,189,375) in view of Moyer et al. (U.S. Patent 5,198,007).

Re claims 1 and 8, as shown Figures 3-4, Molinier et al. disclose an improved Diesel exhaust filter (10) comprising a rigid porous wall (12), the porous wall having a first side (inlet channel side) and a second side (outlet channel side), the filter having three layers, the first layer being adjacent the first side of the rigid porous wall, the first layer comprising a Diesel oxidation catalyst (22), the third layer being adjacent the second side of the rigid porous wall, the third layer comprising a three way catalyst (a catalytic metal component of a NOx adsorber composition (24) is deposited on a washcoat (lines 29-31 of column 8)), the second layer (trapping materials) being between the first layer and the third layer, the second layer comprising a NOx absorbent (alkali metal or alkaline earth metal (line 65 of column 7 to line 6 of column 8)).

Molinier et al., however, fail to disclose that the ceramic in rigid porous wall is acicular.

As shown in Figure 1, Moyer et al. disclose a particulate filter (10) adapted for removing contaminants from a fluid and for use as a carrier of catalysts. As indicated in the Abstract and lines 49-55 of column 2, Moyer et al. teach that it is conventional in the art to form such particulate filter that includes a fused single crystal acicular ceramic support having a discriminating layer thereon, wherein the filter has a network of interlocked needles or platelets which has high mechanical strength, high impact strength, heat resistance, and good resistance to thermal cycling. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the particulate filter taught by Moyer et al. in Molinier

et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to have a filter element having high mechanical strength and good resistance to thermal cycling that is suitable for use in an exhaust gas after-treatment system.

Re claims 2, 4, and 9, in the modified exhaust filter of Molinier et al., the NOx absorbent is comprised of a barium salt, barium oxide, or combination thereof (line 2 of column 8), and the acicular ceramic is comprised of acicular mullite.

Re claim 12, in the modified filter of Molinier et al., the Diesel oxidation catalyst is comprised of alumina particles impregnated and coated with platinum (lines 36-43 of column 9).

Re claim 18, in the modified filter of Molinier et al., since Molinier et al. utilize an impregnation technique to apply the oxidation catalyst, three-way catalyst, and the NOx absorbent onto the porous wall of their particulate filter, the NOx absorber is entirely within the porous filter wall.

Re claim 19, in the modified filter of Molinier et al., each of the catalyst layers are within the porous filter wall (see above).

Re claim 3, the modified filter of Molinier et al. discloses the invention as cited above, however, fails to disclose that the NOx absorbent is present in the from 40 grams/liter to 570 grams/liter of the filter.

With regard to applicants claim directed to a specified range of NOx absorbent material in the filter, the specification of such would have been an obvious matter of design choice well within the level of ordinary skill in the art depending on design variables, such as a fuel type, size of the filter, operational temperature range of the filter, ranges of engine speeds and loads, etc. Moreover, there is nothing in the record which establishes that the specification of such

presents a novel of unexpected result (See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

Re claim 5, the modified filter of Molinier et al. further comprises a three way catalyst layer (a catalytic metal component of a NOx adsorber composition (24) deposited on a washcoat (lines 29-31 of column 8)) within the porous rigid wall, the third catalyst layer being between the second side and NOx absorbent layer.

Response to Arguments

5. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are not persuasive.

In response to applicant's argument that Molinier et al. fail to teach or suggest a filter having three catalyst layers (pages 7-8 of Applicant's Amendment), the examiner respectfully disagrees.

As shown in Figure 4 and indicated on lines 21-37 of column 8, the Diesel exhaust filter (10) of Molinier et al. comprises a first layer (22) having a Diesel oxidation catalyst and a third layer (24) having a three-way catalyst (catalytic metal component) and a NOx adsorber composition (trapping materials). The text on lines 29-37 of column 8 reads as follows: "*The catalytic metal component and trapping materials can then be deposited on or within the washcoat by any suitable manner, such as by impregnation techniques. For example, the catalytic metal component and trapping materials, individually or together, can be dissolved as soluble precursors (e.g., as a salt like potassium nitrate) in an aqueous or organic solvent, which is then impregnated into the porous support. Preferably, the catalytic metal components are*

impregnated prior to the trapping materials." (emphasis added by examiner). Since the three-way catalyst in Molinier et al. is applied before the NOx adsorber composition, there are two distinct layers on the second side (outlet channel side) of the filter – a three-way catalyst layer followed by a NOx absorbent layer. Thus, Molinier et al. clearly teach or suggest a filter having three catalyst layers.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tu M. Nguyen/

TMN

Tu M. Nguyen

February 9, 2010

Primary Examiner

Art Unit 3748